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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ZALUKAEVA, TATYANA	

ART UNIT	PAPER NUMBER
1713	

DATE MAILED: 10/01/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/042,232	SIOL, WERNER	
	Examiner	Art Unit	
	Tatyana Zalukaeva	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the c rrespondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 August 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-20* is/are pending in the application.

4a) Of the above claim(s) *14-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-13 and 18-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-20* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

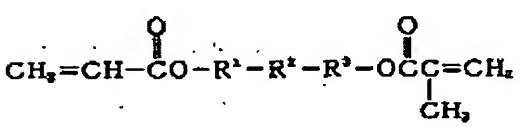
1. Applicants' amendments have overcome rejections under 35 USC 112, second paragraph and objections to the specification, and therefore the above rejections and objections are withdrawn.

2. Applicants' amendment have also fixed the typographical error in the formulas of claim 1.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-13 and 18 stand rejected, and claims 19, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 6487608 in view of "Organic Chemistry" by John McMurry, 1988 (hereinafter referred to as McMurry), pages, 753, 758, 759 or separately in view of any one of the following (each one individually): Mazur et al (U.S. 5,149,642) or Emmons (U.S. 5,243,069) or Matheisen et al (U.S. 5,219,479) or Thanawalla et al (U.S. 4,618,703) or Powanda et al (U.S. 4,859,792).

JP'608 discloses polymerizable compounds containing acryloyloxyl and methacryloyloxyl groups in one molecule of formula (I),



wherein (R1, R3 =(poly)ethylene oxide chain of -(CH2CH2O)-n (n = 0-10); R2 = an alkylene, arylene or cycloaklylene).The polymerizable compounds are prepared . by dehydrating carboxylic acids and alcohols in the presence of catalysts e.g. sulfuric acid under reflux of solvents e.g. benzene. (see abstract) with the temperature range and time within the claimed range. With regard to claim 19 that recite the low content of chlorine in the final product, JP'608 tecahes, for example, in Example 1 (see translation, page 18) utilizes appropriate isolation procedures, including neutralization and distillation, followed by NMR analysis, that shows the high degree of purity of the final product, therefore a skilled artisan would be reasonably appraised that the appropriate isolation and purification procedures will obviously remove the chlorine impurities, if any, with the reasonable expectation of success.

The disclosure of JP'608 duffers from the instant claims by using **methacryloyl chloride instead of methacrylic acid anhydride,** as per instant claims.

However, acid chlorides and acid anhydrides are equally and conventionally used in the art of organic chemistry for esterification.

Thus McMurry teaches basics of esterification reactions, and as two conventionally used method of making esters from alcohols bearing one or more OH groups, discusses using acid chlorides, as a nucleophilic acyl substitution (page 752, Fig.21.7 and page 753). On the same page McMurry further discusses that esterification of alcohols is strongly affected by steric hindrance. On pages 758, 759 McMurry discusses the use of acid anhydrides for esterification, also as nucleophilic acyl

substitution reaction. Thus McMurry recognizes the equivalency of acid chlorides and acid anhydrides for esterification of alcohols.

Each of the cited U.S. Patents show that esterification reaction with acrylic or methacrylic acid derivatives is conventionally carried out either with (meth)acrylic acid chloride or with (meth)acrylic acid anhydride as **equivalent compounds for esterification**.

Matheisen: (col. 5, lines 44-47);

Emmons: (col. 6, lines 27-43);

Mazur: (col. 7, lines 35-40);

Thanawalla (col. 3, lines 15-30);

Powanda (col. 1, lines 15-21)

In the instant case substitution of equivalent methods of estrification (in terms of esterifying agent) requires no express motivation, as long as the prior art recognizes equivalency, ***In re Fount*** 213 USPQ 532 (CCPA 1982); ***In re Siebentritt*** 152 USPQ 618 (CCPA 1967); ***Graver Tank & Mfg. Co. Inc. V. Linde Air products Co***. 85 USPQ 328 (USSC 1950), and therefore a person skilled in the art would have found it obvious, to utilize either acid chloride or acid anhydride based on their recognized equivalency for the particular reaction with the reasonable expectation of success, lacking the criticality of the use of specific anhdride vs. chloride.

5. Claims 1, 2, 5-10, 12, 13, stand rejected under 35 U.S.C. 103(a) as being unpatentable over SU 630249 in view of "Organic Chemistry" by John McMurry, 1988 (hereinafter referred to as McMurry), pages, 753, 758, 759, or separately in view of any one of the following (each one individually): Mazur et al (U.S. 5,149,642) or Emmons (U.S. 5,243,069) or Matheisen et al (U.S. 5,219,479) or Thanawalla et al (U.S. 4,618,703) or Powanda et al (U.S. 4,859,792).

6. SU'249 discloses method of making an asymmetrical acrylate methacrylate of polypropylene glycol (col. 4, line 27). The method comprising two steps: preparing a monomethacrylate of 1,3-propylene glycol (col. 4, lines 28-40), then the product which is monomethacrylate of propylene glycol reacts with acryloyl chloride (col. 5, lines 1-5). Reaction time is 0.5 hours and 1.5 hour after adding all components (col. 5, line 3 and line 9) and reaction temperature is 70°C (col. 5, line 9). Reaction occurs in dimethylacetamide as a solvent (see claim 2, and col. 5, line 5) in the presence of 0.01 g alpha-nitrozonaphthol (col. 5, lines 5, 6). In col. 2, lines 22-25 SU'249 teaches that the content of symmetrical esters is not greater than 0.5-0.6%. The product is filtered, dried and purified by fractional distillation. (col. 5, lines 10-15).

The disclosure of SU' 249 duffers from the instant claims by using **acid chloride instead of acid anhydride,** as per instant claims.

The rationale applied above to remedy the deficiencies of JP is incorporated herein in its entirety.

Response to Arguments

7. Applicant's arguments filed August 07, 2003 have been fully considered but they are not persuasive. The crux of Applicants arguments is that the applied references utilize acrylic acid chloride, instead of acrylic acid anhydride as instantly claimed. In response to this it is noted that this only difference was acknowledged by the Examiner in making an obviousness rejection. Had the references provided the esterification reaction using acrylic acid anhydride, the rejection, would have been under 35 USC 102 (b/e), not 103 (a). Both acid chlorides and acid anhydride are routinely used in organic chemistry for esterification and have been shown to be equivalent compound in terms of their esterification ability, as shown by multiple references in the previous Office Action on the merits. Although in the instant Specification, Applicants mention that their process provides products free of chlorine, it does not outweigh the expected results, namely that the use of compound having no chlorine would have resulted in a product free of chlorine. Unexpected results were not shown to have significance equal to or greater than its expected properties, was obvious to one skilled in the art, in case in which evidence of unobviousness did not rebut evidence of obviousness. In other words unexpected results do not outweigh expected results, as per ***In re Nolan*** 193 USPQ 641 (CCPA 1977).

Furthermore, Applicant has not presented a valid side-by-side comparison between the characteristics of the products obtained by using acid anhydride , as instantly claimed and those obtained by either of the references, wherein the only

difference is the use of chloride vs. anhydride, consult ***In re Dunn***, 394 F. 2d 433, 146 USPQ 479 (CCPA 1965). It is also well settled in ***Ex parte Raske,*** 28 USPQ 2d. 1304, 1306 (BPAI 1993) that Applicants' example and comparative run must **constitute a side-by-side test holding all the variable constant except for the novel feature of the claimed invention.** As such, Applicant has not established that the difference between the claimed invention and the prior art give rise to the unexpected results. Unexpected results do not outweigh expected results, ***In re Nolan*** 193 USPQ 641 (CCPA 1977).

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tatyana Zalukaeva whose telephone number is (703) 308-8819. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (703) 305-2450. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

Tatyana Zalukaeva, Ph.D.
Primary Examiner
Art Unit 1713

September 22, 2003